

Do Treasuries Have a Place in a Modern Portfolio?

Home / Posts / Research Insights, Academic Research Insight, Fixed Income, Macroeconomics Research / Do Treasuries Have a Place in a Modern Portfolio?

Do Treasuries Have a Place in a Modern Portfolio?

By Jon Seed | July 9th, 2020 | Research Insights, Academic Research Insight, Fixed Income, Macroeconomics Research

Do treasuries, most yielding well south of 1%, have a place in a modern portfolio? Currently at these levels, I conclude they don't.

Modern Portfolio Theory says that "the market" portfolio, leveraged or not, has the greatest expected return for the least amount of risk (measured by variance), treasuries included. There are a gazillion simplifying assumptions baked into this theory, but as a general rule it passes the smell test. I ask myself, if the market represents the average investor's portfolio, what makes me so special that I should deviate from the average?

I've covered aspects of this expansive topic on these pages before, trying to define what "the market" really means and arguing that even at 2.5% in late 2016, the US 10-Year Treasury had no value. In this article, I first remind readers that the fixed income "market" is even a more nebulous concept than its equity market counterpart. I then review thoughtful arguments for the role of treasuries despite low yields, namely their role as portfolio insurance due to their negative correlation to other assets, especially during times of market stress. This distinction as an asset class also allows a greater concentration of equity risk and provides the additional benefit of liquidity when other markets freeze, like what happened at the end of March.

Still, these attributes come with a steep price. Too steep of a price, I conclude, as low interest rates and an active Fed mute many of their admitted benefits.

News Flash: You Can't Index Fixed Income

When I proclaim you can't passively index the fixed income portion of your portfolio, I'm pointing out that all aggregate portfolios are highly constructed by the index providers. You can certainly have plenty of options to buy both an international and a US benchmark fixed income ETF. That benchmark, though, will only cover a portion of the investable fixed income universe.

Consider the Bloomberg Barclay's Aggregate Float Adjusted US Aggregate Index which most domestic aggregate "passive" fixed income ETFs try and track: no muni's, no floaters, no private label mortgages or specified mortgage pools, no companies below investment grade (by 2 of 3 rating agencies), no preferred shares, no private placements. As Guggenheim Partners point out, the index represents less than half of the US investible fixed income universe and is skewed towards lower-yielding bonds.

About The Editors



Click Image for Details

What is Alpha Architect?

- How We Got Started (Video)
Our Value Proposition
How to Use Our Site
Focused Factor Philosophy (PDF)
Firm Overview (PDF)

Support Our Mission

- Submit a question
Invest With Us

Research Categories

Select Category dropdown menu

Follow Us and Learn



Blog Newsletter Via Email

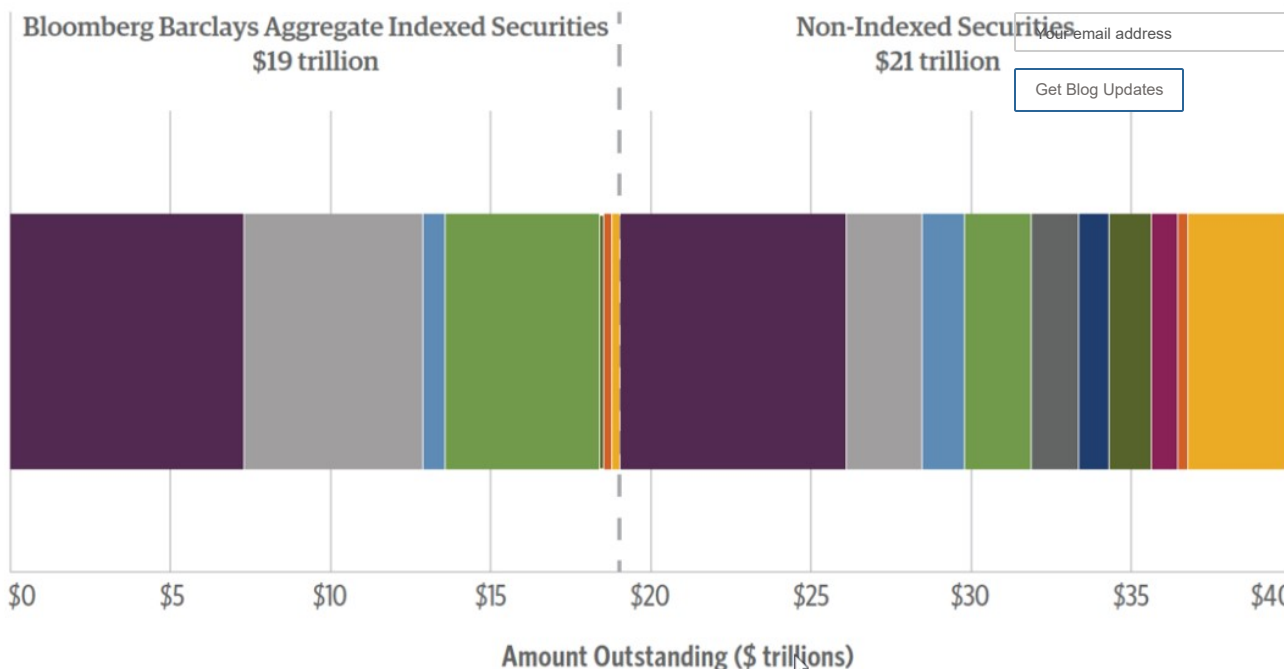
I have read and agree to the Terms & Privacy Policy. Alpha Architect will use your information to provide you with blog updates and for email marketing.

Your email address input field and Get Blog Updates button

Fixed-Income Markets Are Underrepresented by the Agg

The Bloomberg Barclays Aggregate Represents Less than Half of the Fixed-Income Universe

- Treasuries Agency CMBS/RMBS Agency Debt Investment-Grade Corporates High-Yield Corporates
Bank Loans ABS Non-Agency RMBS Non-Agency CMBS



Source: SIFMA, Wells Fargo, S&P LCD, Bloomberg Barclays. Excludes sovereigns, supnationals, and covered bonds. Data as of 12.31.2017.

This website uses cookies and third party services. Settings OK

The results are hypothetical results and are NOT an indicator of future results and do NOT represent returns that any investor actually attained. Indexes are unmanaged and do not reflect management or trading fees, and one cannot invest directly in an index.

As of May 31st, Vanguard's Total Bond Market ETF <BND> which tracks the Bloomberg Barclay's US Float Adjusted Aggregate Index had over 42% invested in treasuries and agencies and another 22% invested in agency MBS leaving the fund with a paltry 1.3% yield. Not many financial plans hold up with that expected return assumption.

Distribution by issuer (% of fund)
as of 05/31/2020

	Total Bond Market ETF
Asset-Backed	0.4%
Commercial Mortgage-Backed	2.2%
Finance	8.7%
Foreign	4.8%
Government Mortgage-Backed	22.4%
Industrial	17.6%
Other	0.0%
Treasury/Agency	41.6%
Utilities	2.3%
Total	100.0%

Distribution by credit quality* (% of fund)
as of 05/31/2020

	Total Bond Market ETF
U.S. Government	60.8%
Aaa	3.7%
Aa	3.6%
A	12.6%
Baa	19.3%
Total	100.0%

But of course, a believer in the global market shouldn't be limited to the US market. Luckily, Vanguard (<BNDX>) and others also have international bond ETF which tracks the Bloomberg Barclay's Global Aggregate ex-USD Float Adjusted RIC Capped Index (USD Hedged, at least using one-month forward contracts). Phew. Yes, there are a lot of adjustments (like what to do with China?), but that fund still only gives an investor a 0.6% yield.

Conclusion: Fixed Income indices are thoughtfully constructed to facilitate easy pricing and thus skewed toward treasuries and away from higher yielding bonds.

All These Treasury Holders Can't be Wrong, Can They?

Besides those willing to outsource the fixed income allocations to Bloomberg, who holds these treasuries with their paltry yields? At 0.74% on June 17th for 10-Year Treasury Notes and inflation expectations closer to 1.5%, the real yield for the 10-Year is solidly negative. 10-Year TIPs likewise yield negative 0.5%.



The results are hypothetical results and are NOT an indicator of future results and do NOT represent returns that any investor actually attained. Indexes are unmanaged and do not reflect management or trading fees, and one cannot invest directly in an index.

Still, I would be foolish to assume that other investors didn't find some real value in holding treasuries. ¹ In fact, one of the largest holders of Treasury bills is Warren Buffett. As reported in *Barron's*, Warren avoids even commercial paper:

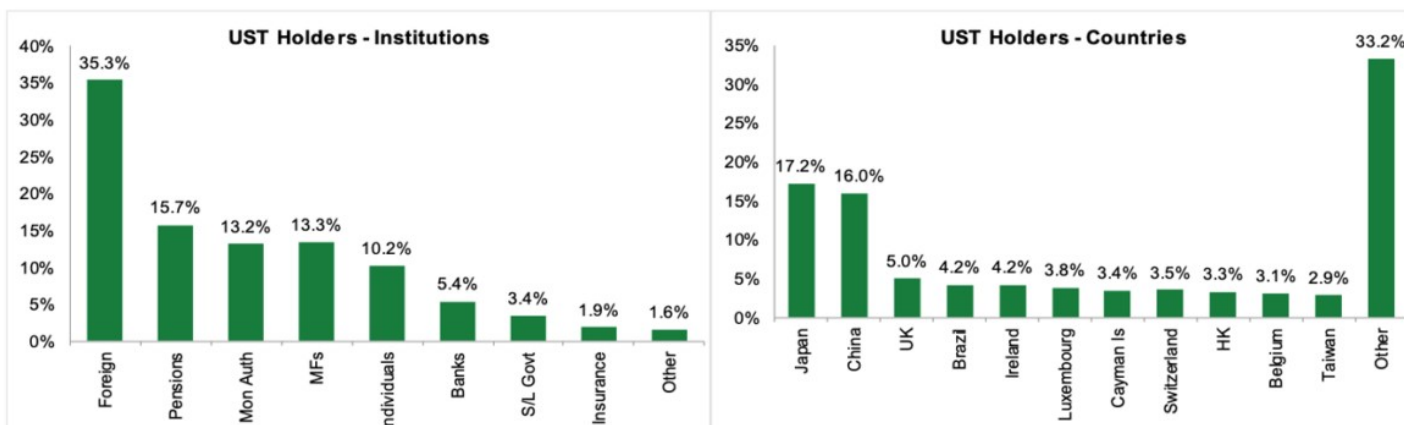
"We have run to the place so that every check clears under any circumstances," Buffett said. "And that's why we own Treasury bills. We don't own commercial paper. We don't rely on bank lines or anything. When people get terrified, and they will occasionally, everything freezes, you know? And you're going to have to stand on your own feet at a time like that. It won't happen very often, but it'll happen occasionally."

Warren Buffett, 2020 Annual Meeting

True that! Look what happened to the supposedly stable and conservative iShares Ultra Short-Term Bond ETF <ICSH> in March. The price at one point dropped 3.8% trading at over a 2% discount to its Net Asset Value. But the bulk of investors don't need access to billions of dollars of liquidity. Cash secured by the FDIC or even money market funds provided plenty of liquidity for individual investors. And even those who do want the duration, hasn't the Fed assured us that they will also provide plenty of liquidity to the corporate market in the next crisis? Certainly, now that the Fed is providing a backstop, the corporate bonds market is hyper-liquid.



Berkshire and its insurance brethren only own 1.9% of US Treasuries and bills according to SIFMA. The bulk is held overseas, mainly by the central banks in Japan and China who are reluctant to, if not mandated not to, take US credit risk. Multinational firms like Apple, Google and Amazon also aren't in the business of taking credit risk and hold their treasuries for tax reasons in Ireland and Luxembourg. Hedge funds located in the Cayman Islands use treasuries as collateral for repo and derivatives and to make interest rate bets. Banks are also large holders of treasuries as they are mandated to by liquidity requirements, low (temporarily zero!) capital charges, and repo collateral needs. State and local governments use treasuries for defeased municipal bonds. In sum, this bulk of treasury holders have very limited choices to invest in anything but treasuries. And of the 23.5% held by mutual funds and individuals, I'd guess a high percentage only own treasuries because Bloomberg's index has them do so.



Conclusion: Although I have a lot of respect for the market, an equilibrium treasury interest rate south of 1% doesn't seem right to me. Too many buyers own treasuries for reasons a typical investor doesn't value. As for liquidity, the Fed seems to have now decided that the corporate market deserves the same liquidity protections as treasuries.

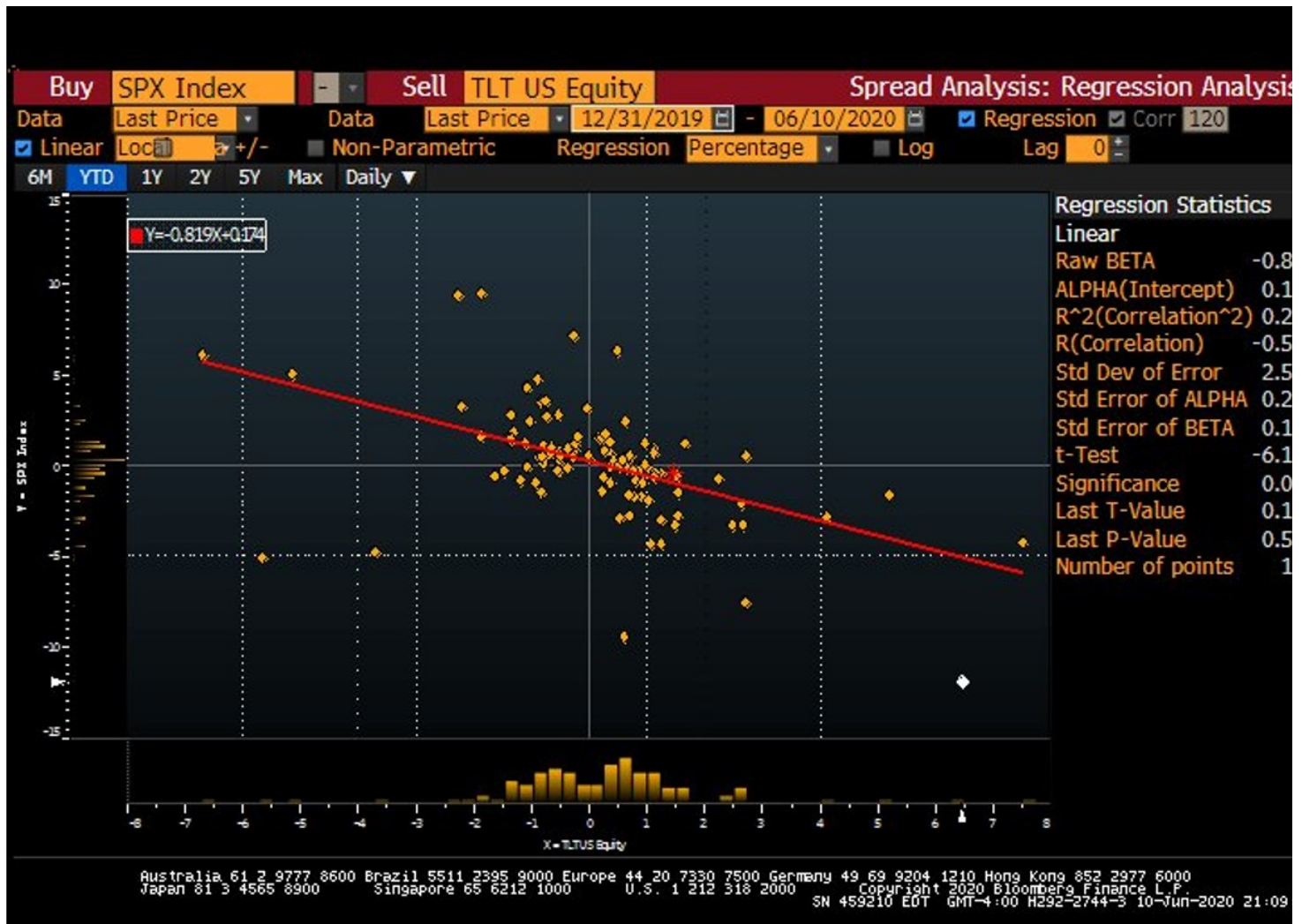
Treasuries Role as Insurance

Of course, just because most institutional investors seem to own treasuries for credit risk reasons doesn't mean that investors can't benefit from other features innate and unique to treasuries. We have already mentioned

their liquidity in times of stress – Buffett’s alleged reason for owning them. Another rational reason: their negative correlation with equities which by providing a level of insurance arguably allows a greater allocation to equities.

Negative Correlations, Especially in Times of Stress

Although correlations between treasury and equity returns can be fragile and even at times positive, during a crisis the world often seeks safety and buys treasuries. Treasuries provide a safe harbor and thus can rise when everything else plummets. In this way, they act as insurance. This March was a good case of their worth. While the S&P 500 was down 20% for the 2 months ending in March, the iShares 20+ Year Treasury Bond ETF <TLT> was up over 13%, in line with what its recent negative correlation would have predicted. Wes [documents](#) many other periods of hefty stock market drawdowns alongside positive treasury returns.



The results are hypothetical results and are NOT an indicator of future results and do NOT represent returns that any investor actually attained. Indexes are unmanaged and do not reflect management or tra fees, and one cannot invest directly in an index.

But as Andrew Miller also [shows](#) in these pages, when isolating the US Long-Term Government returns to simple price performance in periods of crisis, the insurance provided by treasuries only pays out a bit over 50% of the time. In the aggregate, due to a few larger negative periods of treasury performance overlapping with sharp stock market drawdowns, the overall Crisis Alpha of treasuries is negative! What type of insurance policy makes holders pay nearly half the time when they most need it?!

As the chart below shows, correlations between long-term government treasuries and equities returns are fragile. During the Taper Tantrum of 2013 when Bernanke hinted quantitative easing ending, treasuries sold off while the stock market paused before eventually resuming its decade long expansion. Likewise, treasury and equity returns were uncorrelated when the Trump stock market rally began after the 2016 election. Still, in the periods when the stock market was in stress including the GFC, Euro Crisis and most recently the COVID crisis, treasuries did great.



Equally troubling to the treasury and insurance analogy is the "use it then lose it" reality of using treasuries as insurance for the stock portion of an investor's portfolio. When do investors cash in? If they own the index, the answer is never. If they don't index, but own treasuries directly or via an ETF, selling the position removes the insurance and so is often not done.² What value is insurance if the policyholder never collects or when they do, they lose it?

And the cost for insurance isn't small. The iShares US Treasury Bond ETF <GOVT> has underperformed its closest (in duration terms) corporate counterpart <IGIB> by 1.3% since inception in early 2012. How about the potential rewards in another crisis? Likely much smaller given the already low starting point in rates. Will the 10-Year US Treasury likely rally 0.83% again as it did in February and March now that its starting point is already 0.74%? Although 0% is no longer a floor, treasury returns likely now have much *less skew* (i.e., more upside than downside).

Conclusion: Treasuries are a pretty poor hedge in normal times. Currently, they are likely even worse given their low overall yield while their cost in foregone interest in alternative bonds is still high.

Okay, Treasuries Aren't Compelling: What Are My Alternatives? Answer: Nothing

Of course, corporates outperform treasuries over any reasonable period. They subject their investors to more risk; moreover, the extra risk of corporates is fundamentally linked to equities. That fact makes them a lousy diversifier during a crisis.

As the **Merton Model** demonstrates, the shareholders collectively own the call right to a company's assets, and the bondholders are short that call right to the firm's assets. Because the call is hopefully struck at a value much lower than the asset value of the firm (i.e., it's deeply in the money), the equity holder bears most of the risk of the assets changing value. The bondholder simply hopes to collect premium (i.e., interest) for writing the call and trusts the equity holder will exercise the right to buy the assets (i.e., pay the bondholder off) at maturity. When the firm's asset values drop, perhaps in a recession or when volatility spikes in a pandemic, that call's value increases, and the assets' risks shift away from the equity holder to the bondholder. In other words, in times of crisis when investors may value owning bonds the most, the corporate bonds they hold become more like equities.

Given both corporate bonds and equities are exposed to the same vacillations in the worth of firm assets, which offers the better value? Empirically, the risk premium embedded in the expected return for stocks seems high, actually **puzzlingly high** to economists given the lack of variability in corresponding consumption. Why then not avoid corporate credit for greater equity exposure? On average, an investor certainly would be better off.

I'll offer two reasons. First, even conceding that the equity risk premium over treasuries could be as high as 6%, there is a very decent shot that you may earn nothing, even over a lengthy period of time. Ask any Japanese investor who invested at the end of 1989. They are still down nearly 20%. And if you think the US could never follow Japan's shadow, Gene Fama and Ken French calculate in their 2018 paper "**Volatility Lessons**", US investors may have over an 11% chance of negative returns relative to Treasury bills over even 30 years. Many investors don't want or can't afford to take that much uncertainty, especially if the remaining portion of their portfolio is returning less than 1% (or negative with fees).

Second, viewed as being equivalent to short options, bonds could do much better than equities in a very low volatile, stagnate world. Despite the volatility of the world since 2007, **as calculated** by the **Forbes** at **AQR**, the risk premium for the corporate credit sector most exposed to volatility, bonds and loans to those companies rated below investment grade, was a healthy 2.3% a year. Should equities enter a rough long-

term patch perhaps because of a shift in political winds (feel [the Bern!](#)), growing complacency (see [Tyler Cowen](#)), or secular stagnation (see [Larry Summers](#)), that extra 2.3% a year could come in handy.

Credit	Corporate Credit	•	•	•	50%/50% Barclays US High Yield Corporate Bond Index return in excess of Duration-Matched Treasuries/S&P Leverage Loan Index in excess of 3m LIBOR
Credit	Emerging Debt	•	•	•	Barclays Emerging Market Debt Duration-Adjusted excess returns
Credit	Emerging Currency	•	•	•	Equal-weighted emerging market currencies
Volatility	UST Implied Volatility	•	•	•	Delta-hedged straddles on 10y Treasury futures

Risk and Return Statistics (November 1997 to September 2019)

Factors	US Term	Global Term	Global Aggregate	Inflation-Linkers	Corp Credit	Emerging Debt	Emerging Currency	Volatility
Ann. Return	2.6%	2.8%	2.9%	3.9%	2.3%	3.8%	1.0%	3.6%
Ann. Vol.	4.3%	2.8%	2.7%	4.8%	7.6%	11.1%	6.8%	4.3%
SR	0.61	1.01	1.09	0.82	0.30	0.34	0.15	0.85
Skew (Mo.)	0.04	0.10	-0.09	-0.41	-1.38	-3.45	-0.82	-1.59
Max DD	-8.4%	-4.9%	-5.3%	-10.3%	-38.6%	-33.3%	-23.3%	-13.5%

Correlations (November 1997 to September 2019)

	US Term	Global Term	Global Aggregate	Inflation-Linkers	Corporate Credit	Emerging Debt	Emerging Currency	Volatility	S&P 500
US Term	1								
Global Term	0.89	1							
Global Aggregate	0.88	0.96	1						
Inflation-Linkers	0.64	0.67	0.75	1					
Corporate Credit	-0.45	-0.37	-0.16	0.11	1				
Emerging Debt	-0.33	-0.27	-0.11	0.11	0.67	1			
Emerging Currency	-0.08	-0.09	0.04	0.22	0.45	0.58	1		
Volatility	0.08	0.12	0.21	0.23	0.23	0.23	0.13	1	
S&P 500	-0.31	-0.25	-0.12	0.05	0.61	0.65	0.55	0.18	1

* The term "excess of cash" here means excess of 3-m Treasury bill returns.

The results are hypothetical results and are NOT an indicator of future results and do NOT represent returns that any investor actually attained. Indexes are unmanaged and do not reflect management or trading fees, and one cannot invest directly in an index.

Conclusion: Although the diversity advantages of treasuries may allow for a greater allocation in equities, those advantages are costly in many environments. Not all investors can afford that cost.

Summary: Don't Listen to Bloomberg, Treasuries Aren't for Everyone, at Least at These Rates.

To summarize, treasuries have a much smaller theoretical role within a true market portfolio than various indices represent. Even then, the average holder of treasuries is more attracted to certain attributes, often regulatory, than is the average individual investor.

Treasuries do offer individual investors liquidity and diversification. The common-sense next question is at what cost and to what advantage. The opportunity cost relative to corporate bonds is not insignificant. As corporate bonds are short an option, in a low volatility and/or low growth world with paltry equity returns, that cost of not owning enough credit risk may be higher than investors can afford.

The Fed's purchase program has also shrunk whatever liquidity premium treasuries benefitted from in the past. Corporate bonds are now very liquid and may stay that way given the likelihood the Fed will again provide a buffer during the next crisis. Likewise, with treasury rates mainly below 1%, it's unclear how much protection treasuries will provide in the next crisis. Even at higher rates, their diversification track record is mixed. Should interest rates rally a similar amount next crisis, would investors cash in their treasury insurance policies this time? As I said back in [my article](#) from 2016 when I last discussed interest rates:

"We just don't know the future nor do we try to. If we did forecast, it's hard to argue we'd be any better than the 'experts' who are shockingly bad at predicting bond markets (or really much of anything)."

Corporate spreads could widen as default risk spikes under perhaps a second wave of COVID-19 infections or some other unforeseeable event. In that case, treasuries could again outperform. I for one am not willing to pay the price for a crappy insurance policy that I lose if I use it and may make me pay when I want to use it. Sorry, I'll wait until treasuries provide some actual positive real return. I think many other investors, once educated, would want to wait, too.

Notes:

1. This is my own form of week market efficiency: ignore your first instinct that the market is foolish. It is more likely you. ↩
2. <TLT> did see sizeable redemptions in March as did iShares shorter duration version IEF, but its even shorter duration ETFs <IEI>, <SHY> and <SHV> saw healthy share creations ↩

Learn Something? Share the Knowledge!



About the Author: [Jon Seed](#)



Jonathan Seed began his career at Franklin Resources where he was an Assistant Portfolio Manager for their then quantitative asset arm, Franklin Asset Management Systems. There, he helped build value biased equity portfolios. After graduating with honors from the University of Chicago Booth School of Business, he began a 20 year career on Wall Street focused on fixed income, with an emphasis on structured products. He later worked in fixed income and equity before switching to institutional sales, leaving Credit Suisse as Managing Director in 2009 for RBS Securities and leaving the industry altogether in 2014, after which he started Seed

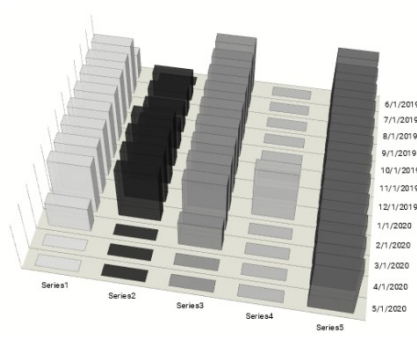
Wealth Management, Inc., a Registered Investment Advisor incorporated in the state of Illinois. Visit www.seedwealthmgmt.com for a full summary of our approach.

Related Posts



[Combining Momentum with Long-Term Reversal](#)

July 3rd, 2020



[DIY Asset Allocation Weights: July 2020](#)

July 2nd, 2020

Table 1: H		
Path	Trend Out	
	Date 1	Date 2
1	u	u
2	u	u
3	u	u
4	u	d
5	d	u
6	u	u
7	u	d
8	u	d
9	d	u
10	d	u
11	d	d
12	d	u
13	d	u
14	d	d
15	d	d
16	d	d

[How Trend Distribution](#)

June 29th, 2020

GET UPDATES NOW

I have read and agree to the [Terms & Privacy Policy](#). Alpha Architect will use your information to provide blog updates and for email marketing.

I have read and agree to the [Terms & Privacy Policy](#). Alpha Architect will use your information to send index updates and for email marketing.

FOLLOW US AND LEARN



RECENT TWEETS

youtu.be/OJKpBNjITVg My ultra prepper brother @CliffGry has some good hydration tips if water isn't on tap. 3 hours ago

@katewaldock @msbgu Wow. Bold move! Congrats 5 hours ago

Recent

[Do Treasuries Have a Place in a Modern Portfolio?](#)
July 9th, 2020

[March for the Fallen 2020: Sign-Up for The Virtual Version!](#)
July 8th, 2020

[Market Return Around the Clock](#)
July 7th, 2020

IMPORTANT DISCLOSURES

Performance figures contained herein are hypothetical, unaudited and prepared by Alpha Architect, LLC; hypothetical results are intended for illustrative purposes only. Past performance is not indicative of future results, which may vary. There is a risk of substantial loss associated with trading stocks, commodities, futures, options and other financial instruments. [Full disclosures here.](#)

